AMENDMENTS TO THE CLAIMS

1. (ORIGINAL) A method of implementing a local area network in a home telephone network having a connector, configured for sending and receiving ISDN-based signals to and from a public switched telephone network, and a four-wire bus including a two-wire send path and a two-wire receive path for sending and receiving the ISDN-based signals, respectively, between the connector and connected ISDN terminal devices, the method comprising:

connecting a high pass filter between the four-wire bus and a two-wire analog telephone line configured for transmitting analog telephone signals; and

transmitting network data signals between a first network node coupled to the four wire bus and a second network node coupled to the two-wire analog telephone line.

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2. (ORIGINAL) The method of claim 1, further comprising isolating capacitive influences of each of the connected terminal devices from the two-wire send path by adding a common mode choke between each corresponding ISDN terminal device and the two-wire send path.

3. (CURRENTLY AMENDED) The method of claim 2, wherein the transmitting step includes:

coupling [[the]] a first home network signal to a middle tap of a primary winding of a first S0 transformer coupled to the two-wire send path; and

coupling [[the]] a second home network signal to the middle tap of the primary winding of a second S0 transformer coupled to the two-wire ~~send~~ receive path.

4. (CURRENTLY AMENDED) The method of claim 3, further comprising receiving by the second network node the first and second home network signals, comprising:

receiving the first home network signal from the middle tap of the primary winding of a third S0 transformer coupled to the two-wire send path;

receiving the second home network signal from the middle tap of the primary winding of a fourth S0 transformer coupled to the two-wire ~~send~~ receive path; and

passing the first and second home network signals through the high pass filter to the second network node via the two-wire telephone line.

5. (ORIGINAL) The method of claim 4, wherein the transmitting step includes transmitting the first and second home network signals to the second network node across a distance of about 80 meters.

6. (CURRENTLY AMENDED) The method of claim 1, wherein the transmitting step includes:

coupling [[the]] a first home network signal to a middle tap of a primary winding of a first S0 transformer coupled to the two-wire send path; and

coupling [[the]] a second home network signal to the middle tap of the primary winding of a second S0 transformer coupled to the two-wire ~~send~~ receive path.

7. (CURRENTLY AMENDED) The method of claim 6, further comprising receiving by the second network node the first and second home network signals, comprising:

receiving the first home network signal from the middle tap of the primary winding of a third S0 transformer coupled to the two-wire send path; and

receiving the second home network signal from the middle tap of the primary winding of a fourth S0 transformer coupled to the two-wire ~~send~~ receive path; and

passing the first and second home network signals through the high pass filter to the second network node via the two-wire telephone line.

8. (ORIGINAL) A computer network comprising:

a connector configured for sending and receiving ISDN-based signals to and from a public switched telephone network;

a four-wire bus having a two-wire send path and a two-wire receive path for sending and receiving the ISDN-based signals between the connector and ISDN terminal devices;

a low pass filter, coupled between the two-wire send path and the connector, for isolating capacitive influences of the connector from the two-wire send path and filtering ISDN harmonic signals occurring substantially at the frequencies of network data signals;

ISDN terminal filters, each configured for isolating capacitive influences of a corresponding one of the ISDN terminal devices from the two-wire send path;

first and second end stations configured for exchanging the network data signals at frequencies substantially higher than the ISDN-based signals via at least one of the two-wire send path and the two-wire receive path, the first end station coupled to at least one of the two-wire send path and the two-wire receive path and the second end station coupled to an analog telephone line; and

a high pass filter for coupling the four-wire bus to the analog telephone line, the second end station exchanging the network data signals via the analog telephone line and the four-wire bus.

9. (ORIGINAL) The computer network of claim 8, further comprising first and second S0 transformers configured for coupling the first end station to the two-wire send path and the two-wire receive path, respectively, each of the first and second S0 transformers having a primary winding coupled to the corresponding two-wire path, each primary winding having a middle tap path configured for coupling to a corresponding network data signal differential input of the first end station.

10. (ORIGINAL) The computer network of claim 9, further comprising third and fourth S0 transformers configured for coupling the high pass filter to the two-wire send path and the two-wire receive path, respectively, each of the third and fourth S0 transformers having the primary winding coupled to the corresponding two-wire path and having the middle tap path configured for coupling to a corresponding terminal end of the high pass filter.

11. (ORIGINAL) The computer network of claim 10, wherein the first and second end stations exchanging the network data signals across the two-wire send path and the two-wire receive path have a transmission distance of about 80 meters.

12. (ORIGINAL) The computer network of claim 8, wherein the four-wire bus is an internal S0 bus of a private branch exchange.